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The High-School Teaching Load and Preparation of High-School Teachers

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In keeping with the purpose stated, it will always be appreciated by those who prepare the bulletins if the readers of them will send to the bureau any comments, suggestions, or criticisms, which they may care to make with reference to the service received or desired from such bulletins. It is important even to know that they are read by those to whom they are sent.

The bulletins are also sent to educational institutions, libraries, and research bureaus in other states for the purpose of securing in exchange bulletins which they may have for distribution.

A list of the bulletins prepared by this bureau to date is given here:

1. The Organization of a Rural High School. (Shawnee-Mission)
2. The Establishment of a Junior College. (Atchison)
3. Instruction Results in Elementary Schools of Kansas.
4. College Standards and a Public Junior College.
5. The Teaching Load and Preparation of High School Teachers.
6. An Experiment in the Teaching of English.
7. Schooling in One-Teacher Schools.
8. The County Superintendent as Supervisor of Instruction.
9. The Conditional Value of a Longer School Year in One-Teacher Schools.
10. The Vocabulary of High School Students in Written Composition.
11. Some Financial Aspects of School Administration.
12. Survey Report of Chanute School System.*
13. Reports of School Building Surveys in Lawrence, Ottawa, Dodge City, Junction City,* and Great Bend.*

* No longer available for general distribution.

October, 1926.

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The High-school Teaching Load and Preparation of High-school Teachers.

Purpose and Scope of the Study.

Many and varied problems exist in connection with the preparation of high-school teachers, the supervision of instruction in high school, and the administration of high schools with reference to both curriculum and teaching staff, which demand facts for their solution that have not previously been made available in this state. With such practical needs in mind, a plan of coöperation was developed during the year 1924-'25 by which the State Department of Education and the University of Kansas agreed to conduct a joint study of the high-school teachers in the state with reference to the size and type of their teaching load and the adequacy of both their academic and professional training.

For making such a study it was agreed that the superintendent of public instruction should collect directly from the high-school teachers of the state the information required. For this purpose a question form was prepared by the School Service and Research Bureau of the State University, to be used by the State Department. Tabulations and analyses of the data which were collected were to be made by the author of this report; and it was agreed that the results of the study would be made available for both the Bureau and the State Department, as well as for the teacher-training institutions, the employers of teachers, and for city or county school officers.

These blank forms for the teachers were sent out by the state superintendent in January, 1925, together with a letter to the high-school principals. (A copy of the letter and of the question form are included in the appendix of this bulletin.) A ready response to this request was received from teachers and principals. Their fine coöperation suggested that they sensed the importance of the inquiry, and their attitude has certainly contributed greatly to the development and completion of the undertaking. The distribution of the report in bulletin form is expected to serve the needs of all who are interested in the educational significance of what is disclosed by this investigation.

This study is concerned with the information reported directly by 2,449 teachers and 410 principals or superintendents in 442 high schools in the state of Kansas during the year 1924-'25. Throughout this bulletin the high school is regarded as the conventional four-year type in its organization. The reports of the teachers in the various schools were assembled by the high-school principal and sent by him to the state superintendent's office. They were then turned over to the School Service and Research Bureau of the State University for tabulation and interpretation of the facts which they contained.

For the sake of facilitating comparison with similar studies which had already been made for the states of Minnesota and Washington,* the same classification of schools according to the size of teaching staff has been employed in this study as in those named. The high schools accordingly form three groups with reference to the number of teachers employed. Those which employed not more than 10 teachers comprise Group I; schools which had from 11 to 29 teachers comprise Group II; and Group III includes the schools which employed 30 or more teachers in the high school. Since 78 per cent of the schools in Group I did not have more than 5 teachers, they may be thought of as in general very small high schools.

The distribution of the number of teachers, teaching principals and schools represented in the three groups as treated in this study is shown in Table 1. The greater scope of this study is indicated by comparison with the Washington study, which included 496

TABLE 1.—Number of teachers and schools represented in this study.

	Number of teachers.	Number of principals.	Number of schools.
Group I	1,382	361	380
Group II	656	49	51
Group III	411	.....	11
Totals	2,449	410	442

teachers and 39 principals, or with the Minnesota study, which was based on 1,006 teachers and 95 principals, in three similar groups.

Since the small high schools of Group I comprise by far the most

* Training of High-school Teachers of Minnesota: P. W. Hutson, University of Minnesota. Bulletin, Educational Monograph No. 3, 1923.
Training of Teachers in the Accredited High Schools of the State of Washington: L. V. Koos and C. Woody, Eighteenth Yearbook of the National Society for the Study of Education, Part I, pp. 213-57.

numerous type of high school in the state, it is easily understood why more than 50 per cent of all teachers included in this study are in that group. In Table 1 are represented approximately 60 per cent of the teachers employed in the small high schools of the state, 82 per cent of those in schools having 11 to 29 teachers, and 100 per cent of those in the largest schools which belong in Group III. In the smaller schools the administrative officers regularly teach one or more classes, and for the purposes of this study they are classed as "principals." Consequently this term includes some who are known in fact as principals and some who bear the title of superintendent. In Group II 44 of the 49 principals teach one or more classes; in Group III none of the principals do any classroom teaching. Reports were not received from the total number of teachers employed in a few of the schools, but in a large majority of the schools included in the study the facts requested were reported by all teachers.

The Number and Size of Classes Taught.

The situation with reference to the number of classes per teacher taught daily in the high schools of the state is shown in Table 2. This distribution states the frequencies separately according to size of school and the type of teaching work. The nonacademic

TABLE 2.—Number of high-school classes per day taught by high-school teachers.

Number of classes.	Group I.			Group II.			Group III.	
	Academic teachers.	Non-academic teachers.	Principals.	Academic teachers.	Non-academic teachers.	Principals.	Academic teachers.	Non-academic teachers.
0	.....	.....	.....	.....	.....	5	.....	.....
1	9	16	10	24	36	15	5	3
2	20	15	49	40	54	15	29	7
3	88	27	96	82	35	6	30	9
4	360	37	121	94	41	5	43	33
5	457	65	60	186	24	2	161	75
6	196	39	20	17	18	1	7	9
7	19	22	5	1	4	.....	.....	.....
8	3	9	.....	.....	.....	.....	.....	.....
Totals	1,152	230	361	444	212	49	275	136
Median number of classes	5	5	4	4	3	2	5	5

In reading this table, 9 of the academic teachers in Group I teach one class, 20 teachers in the same group have 2 classes daily, 88 teach 3 classes, and so on.

teachers as classified here are those who teach such subjects as shop work, music, cooking and physical education.

The teachers in Group I teach from one to eight classes a day. In this table no recognition is given to either the time or energy spent by teachers in charge of study hall, library, advisory work, supervision, coaching, committee duties or similar activities. The importance of these activities has not been overlooked or questioned in this connection, but such work is usually not well defined and it is difficult to discover an acceptable basis for comparing these duties with the work represented by a period of teaching. Yet such supplementary duties frequently add much to the teaching load of high-school teachers. Some teachers are also devoting a portion of their time to teaching classes in the junior high school while they teach part time in the senior high school. Considering these facts, their teaching load is necessarily understated in this table. It may be fair to assume that as a whole they average in these other forms of service what is equivalent to one or more additional teaching periods.

Facts are provided in Table 2 to show that both academic and nonacademic teachers teach an average of five classes daily in the schools of Group I and Group III. In the schools of Group II the average number of periods per day are four and three, respectively, for these two types of teachers. In the small schools, Group I, a considerable number of teachers carry a daily teaching load of seven or eight classes without including the supplementary school duties with which high-school teachers are so frequently charged.

The median teaching load of principals as reported in the smaller schools is only one class per day less than the median load of full-time teachers. This fact implies that whatever the principal may be able to accomplish in caring for various administrative duties, in supervising instruction, in planning an educational program and in participating in community activities must be accomplished in the equivalent of one teaching period per day, or else in the time which is not included in the usual school day; that is, if he continues to meet his classes for the full number and time of the periods scheduled. The most likely outcome of such a situation will be his failure to care adequately for these other responsibilities in the brief time at his disposal, and doubtless a portion of what he does accomplish may be done at the expense of effective teaching work. In Group II the principals teach an average of two classes per day, while in

the larger schools (Group III) the principals do no classroom teaching.

Closely related to the number of classes taught per day is the size of classes taught by the teachers in the three school groups designated. Not only does the size of classes determine the total teaching load in terms of number of pupils taught by these teachers, but it is a prominent factor in the cost of instruction per student and it likewise closely concerns the need of school or class reorganization for the purpose of securing an improved situation with reference to the very large or very small classes.

A distribution of the number of classes taught and the number of pupils enrolled in the classes is presented in Table 3. All the classes, whether in academic or nonacademic subjects, are included in this tabulation. Practically all classes having more than thirty-five students enrolled pertain to such subjects as music, health and citizenship, which frequently are offered to the entire school or a considerable portion of it assembled as one class.

TABLE 3.—Number and size of classes taught in high school.

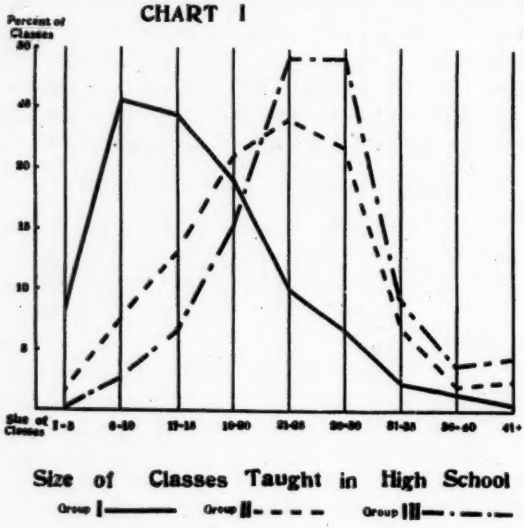
Size of Classes.	Group I.		Group II.		Group III.	
	Number of classes.	Per cent of total.	Number of classes.	Per cent of total.	Number of classes.	Per cent of total.
1- 5	726	9.0	64	1.4	1	.....
6-10	2,086	25.8	346	7.6	42	2.6
11-15	2,010	24.8	597	13.0	102	6.4
16-20	1,547	19.0	962	21.2	240	15.2
21-25	880	9.9	1,103	24.3	460	29.0
26-30	532	6.5	975	21.5	468	29.1
31-35	161	2.0	301	6.5	129	8.1
36-40	100	1.3	93	2.0	65	4.1
41 or more	56	.6	101	2.2	74	4.7
Total classes	8,098	.....	4,542	.....	1,581	.....

In the smaller schools 726 classes had from 1 to 5 students enrolled. The very small classes were much less numerous in the other groups. The facts shown in this table indicate that more than one-third of all classes taught in the smaller schools (34.8 per cent) have an enrollment not exceeding 10 students. The corresponding percentages in schools of Groups II and III are 9 and 2.6 per cent, respectively. The median size of classes taught in the smaller schools is 13 students; in Group II, 23 students; in Group III, 25

students. The facts presented in Table 3 are for the first semester of the year 1924-'25, but there was no indication that the distribution would have been significantly different had the distribution pertained to the second semester of that year.

Presumably there are some advantages which may pertain to the very small class from the standpoint of less variability in the instruction group and a possibility of individualized instruction, as each individual may receive a larger share of attention during the teaching time. There are likewise some potential advantages claimed for the operation of larger classes. Among these possible advantages are increased competition and stimulus for the promo-

CHART I



Size of Classes Taught in High School

Group I——— Group II- - - - Group III—·—·—

tion of study, a larger number and more varied contacts with other students, resulting perhaps in better social development of each, and in fact more likelihood that the class will be provided with a better-trained instructor because size of class is so closely related to the unit cost of instruction.

A comparison of the situation in the three groups of schools with reference to size of classes taught has been made in the graphical representation shown in Chart 1.

It is possible by combining the two sets of facts which comprise Tables 2 and 3 to derive a more inclusive statement of the actual teaching load—one that is based upon both the number of periods

and the number of students taught. The pupil-hour load gives the aggregate of all pupils taught in the various classes by one teacher in a school day. It may be thought of as quantitatively equivalent to that number of students taught in a single class per day. At least it provides a definite basis of comparison of the teaching load recognizing both the hours and the students taught.

Although many of the teachers in Group I teach an excessive number of periods per day, the fact that their classes are considerably smaller than are those in the other two groups accounts for the differences shown in Table 4 with reference to the pupil-hour load per day for which these teachers are responsible. Only the teachers of academic subjects are included in this analysis as it was felt that the facts pertaining to nonacademic teachers were not wholly comparable with those relating to academic classes because shop, laboratory and commercial work are more subject to their own regulations and procedure.

TABLE 4.—The pupil-hour load per day of full-time academic teachers.

	Median number.	Middle 50 per cent.	Range.
In Group I	67	50—88	11—150
In Group II	105	85—126	31—190
In Group III	126	112—140	61—190

The teacher of academic subjects in Group I teaches an average of 67 students per day. The middle 50 per cent of the teachers in schools of this group teach somewhere between 50 and 88 students per day. The median number of students taught by a teacher in Group II is 105; in Group III, 126. In both of these groups the middle 50 per cent as defined by totals of pupil-hours is considerably larger than those in Group I. The facts in this table are based upon data for the first half-year of 1924-'25.

Number and Diversity of Subjects Taught.

An investigation of the number of classes and the number of students taught per day by a teacher leads rather directly to a consideration of the number of different subjects taught by a teacher and the kind of preparation which the teacher has had for teaching those subjects. The diversity of subjects taught and the adequacy of training in each will tend to affect the significance of the teaching load which the teacher has to carry. For example, there is ob-

viously less of a tax upon the teacher charged with the teaching of a single subject, in which he has been prepared, having perhaps two or more classes in some divisions of that subject, than there is upon the teacher responsible for the same number of classes which involve as many or nearly as many different subjects as the number of the classes.

A careful analysis was made of the number of different subjects (fields of instruction) which were taught by the high-school teachers in the first semester of 1924-'25. In this analysis all classes in any phase of English were regarded as representing but one subject. Likewise, all classes in history or Latin, for example, were classed as a single subject. However, biological and physical sciences (not including agriculture) were regarded as two distinct subjects. Accordingly, the statement of different subjects represented by the teacher's schedule, as shown in Table 5, is a statement of relatively unrelated fields of instruction. It may be assumed that separate and specific preparation will be required for the adequate teaching of each subject. Perhaps even the assumption that all phases of either English or history may be regarded as constituting a unified subject is unwarranted. At least Table 5 seems to give a conservative statement of the diversity of subjects taught.

TABLE 5.—Number of different subjects taught by a teacher (in a semester).

	Different subjects.						Total teachers.	Median number.
	1	2	3	4	5	6		
Teachers:								
Group I	270	388	388	250	78	8	1,382	3
Per cent	20	28	28	18	6.0			
Group II	361	196	80	19			656	1
Per cent	55	30	12	3				
Group III	306	82	20	3			411	1
Per cent	75	20	5					
Principals:								
Group I	28	89	127	90	26	1	361	3
Per cent	8	24	35	25	7			
Group II	21	12	9	2			*49	1
Per cent	43	24.5	18	4				

* Five principals teach no class.

The facts in Table 5 make evident to the reader that in the smaller schools half of the teachers are teaching three or more different subjects, while only 20 per cent of their number are teaching all of their classes in any one field of instruction. One may readily

note that nearly three times as large a percentage of teachers in Group II are charged with the teaching of a single subject (55 per cent) and a relatively small part of their number (15 per cent) are teaching as many as three different subjects. In Group III 95 per cent of the teachers are responsible for offering instruction in not more than one or two different subjects.

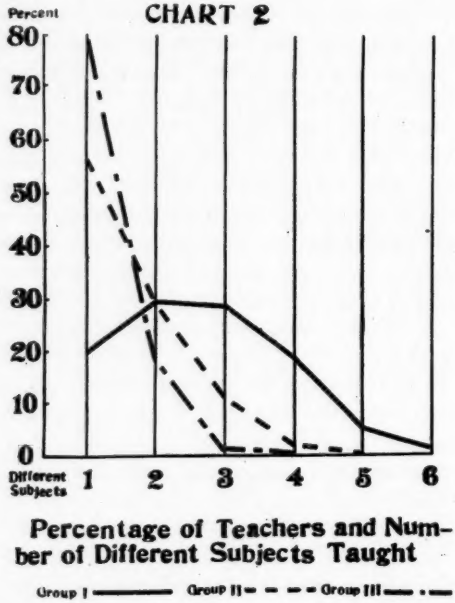
The principals in the small schools have their teaching work spread over three or more fields of instruction more generally than do their teachers. Two out of every three of these principals (67 per cent) are carrying such a diversified load of teaching, while relatively few (8 per cent) are limiting their teaching to one field, and a majority of these are teaching only a single class, so that they are classified in Table 5 by that fact alone. In Group II five principals did not teach any class, and nearly half of the others (43 per cent of all) taught only one type of work. However, 22 per cent of these principals taught three or more subjects.

It is obvious that teachers in the small high school require preparation in a greater variety of subjects than is required of those in the larger high schools in order to handle their teaching assignments satisfactorily. The median number of subjects taught in the former is three, while the median number of different subjects in the larger schools (Groups II and III) is one. It is also interesting to note that half of the principals in Group II teach one subject or none, while in Group I half of the principals teach three or more different subjects. Certainly an inquiry seems to be warranted as to how well the teachers and principals in the smaller high schools are prepared to teach such a wide range of subjects and whether they can be expected to do it with fairness to themselves, the students or the schools in which they are teaching.

In both the Minnesota and Washington reports the median number of subjects taught by teachers in the small high schools was two, in contrast to a median of three subjects in similar schools in Kansas. In the larger schools of Groups II and III the median number of subjects in those states was the same as in this state. Referring to those who were teaching three or more subjects, the following quotation is taken from the Minnesota Bulletin (page 8): "In the fact that teachers are teaching so many subjects in one community or another we see clearly one explanation for the quality of work that is being done—teachers *cannot* be adequately prepared in so many subjects. Some steps must be taken to make the teaching situation less difficult."

A more striking presentation of the markedly different situation in the three different groups with reference to the number of subjects taught by the individual teachers is presented in Chart 2.

The contrast in the percentages of teachers in the three groups who are offering but one subject is so striking as to be easily observed. Likewise, the comparison with reference to the percentage of teachers who offer four or more different subjects presents a contrast almost as definite.



The different subjects which constitute a teacher's schedule were tabulated to show which subjects occur singly with greater frequency than others. Every appearance of the various subjects taught in the high school is accounted for in Table 6, except for reports that were incomplete and some of the review subjects of normal-training teachers. The table also discloses the number of teachers in each group who teach the subject, how frequently it is taught alone by a teacher, and how frequently it is combined with one or more other subjects in a teacher's schedule. A single subject as used in this table signifies, for example, one or several classes in English, while a two-subject combination would include one or

more classes in each of two fields of instruction, as, for example, history and English or history and mathematics. It is thus possible for a teacher having a schedule of six classes to have them all in one subject or in two subjects, or in any other combination up to six subjects.

In the first column of the table is stated the number who were teaching each subject singly. It appears that English, home-making, commercial work, music and mathematics are the subjects which are taught singly much more frequently than any others. The same subjects, except music, appeared singly with marked frequency in the Minnesota and Washington studies. In those studies, as in this, the social sciences and physical sciences appear seldom as single subjects, and in such instances they are often taught by the principal, who teaches a reduced schedule. The column of totals will disclose the significant fact that 108 more teachers are concerned with teaching English than with the teaching of any other subject.

In the high schools of Group I only 27 per cent of the subjects were assigned in combinations of fewer than three different subjects and 43 per cent were assigned in combinations of four or more different subjects. The meaning of such a situation with ref-

TABLE 6.—Number times each subject appears in a teacher's schedule alone or in combination with other subjects

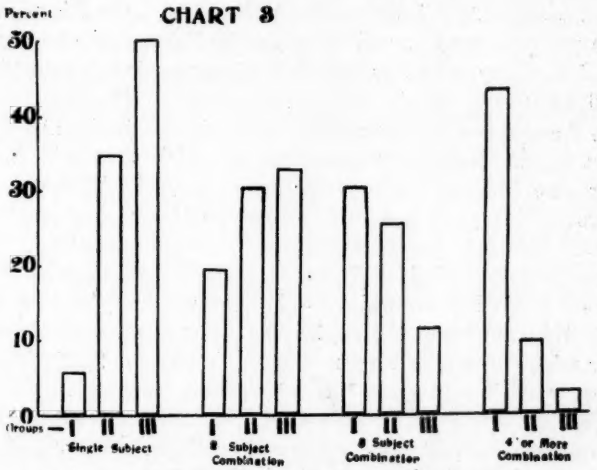
	As a single subject.	In a 2-subject combination.	In a 3-subject combination.	In a 4-subject combination.	In a 5-subject combination.	In a 6-subject combination.	Totals.
Group I:							
English	59	183	153	80	14	.....	489
Mathematics	28	85	163	141	45	1	463
History	5	105	151	117	34	4	416
Economics	.....	9	38	51	37	3	138
Political science	.....	35	88	87	48	7	265
Sociology	.....	7	20	29	15	1	72
Physics	6	39	87	95	30	.....	257
Chemistry	.....	1	5	6	.....	.....	12
Biology	.....	8	28	28	13	1	78
Physiography	1	3	19	34	32	3	92
Physiology	.....	8	54	65	29	11	167
Psychology	1	7	27	62	29	11	137
Physical education	1	16	18	19	6	.....	60
Home-making	37	78	59	54	29	.....	257
Commercial	59	38	70	81	38	.....	286
Latin	12	78	61	43	20	.....	214
French	.....	9	8	6	2	.....	25
German	.....	1	.....	1	.....	.....	2
Spanish	.....	18	16	13	3	.....	50
General science	.....	25	59	103	41	2	230
Music	52	23	23	19	8	.....	125
Shop	11	36	50	50	24	.....	171
Agriculture	11	44	76	76	23	10	240
Totals	284	856	1,273	1,260	520	54	4,246
Per cent of total	7	20	30	30	12	1	.....

TABLE 6.—CONCLUDED.

	As a single subject.	In a 2-subject combination.	In a 3-subject combination.	In a 4-subject combination.	Totals.
Group II:					
English	97	36	15	3	151
Mathematics	48	35	21	5	109
History	14	44	23	6	87
Economics	1	5	18	3	27
Political science	2	25	20	6	53
Sociology	.....	5	9	3	17
Physics	1	12	27	5	45
Chemistry	1	10	14	3	28
Biology	3	11	15	5	34
Physiography	.....	3	6	8	17
Physiology	2	10	8	6	26
Psychology	.....	.....	6	7	13
Physical education	15	11	10	4	40
Home-making	45	7	2	2	56
Commerce	74	10	8	6	98
Latin	9	28	8	1	46
French	4	6	6	.....	16
German	.....	.....	1	.....	1
Spanish	8	14	10	2	34
General science	.....	12	20	1	33
Music	23	5	2	.....	30
Shop	2	9	2	.....	13
Agriculture	14	14	24	7	59
Totals	363	312	275	83	1,031
Per cent of total	35.0	30.0	27.0	8.0	.....
Group III:					
English	76	16	7	1	100
Mathematics	40	15	4	1	60
History	18	25	10	1	54
Economics	.....	5	5	1	11
Political science	3	21	6	2	32
Sociology	.....	2	3	.....	5
Physics	6	9	1	.....	16
Chemistry	6	6	2	.....	14
Biology	15	3	2	.....	20
Physiography	.....	2	1	.....	3
Physiology	1	2	8	.....	11
Psychology	1	2	4	1	8
Physical education	18	10	1	.....	29
Home-making	20	5	.....	1	26
Commerce	32	2	2	.....	36
Latin	10	12	.....	.....	22
French	3	10	1	.....	14
Spanish	8	8	1	.....	17
General science	1	7	.....	2	10
Music	10	.....	.....	.....	10
Shop	2	1	.....	.....	3
Agriculture	3	2	2	.....	7
Totals	273	165	60	10	508
Per cent of total	53	32	11	2	.....

erence to making the task of training teachers more difficult and increasing the weight of the teaching load will be easily appreciated. In the schools of Groups II and III the teaching schedule in general showed much less diversity and complexity than it did in the smaller schools. Sixty-five per cent of the teachers in Group II and 85 per cent of those in Group III were not assigned more than one or two different subjects to teach.

Consequently a much wider range of preliminary training is needed for teachers in the smaller schools or else a more restricted teaching schedule than at present, if as efficient teaching results are to be expected from them as from teachers in the larger high schools. It is evident that a most serious educational problem is found in the smaller schools with reference to the great diversity of subjects assigned to an individual teacher, and it is in these small high schools, where their work is so handicapped, that a large majority of the high-school teachers of the state are to be found.



Frequency of Subjects in Teachers Schedule Alone or in Combination with Other Subjects

The distribution of the teachers' work in the three sizes of schools according to the amount of unity or diversity of subjects in their teaching schedule is shown in an impressive way in Chart 3. One question which may be suggested in Chart 3 is whether there is any reason or basis for expecting preparation in the same teacher-training courses to prepare one for the two widely different types of service which are demanded of teachers in the larger and smaller schools. Furthermore, experience in the small school, teaching four or more different subjects, probably ill prepares the teachers to teach effectively a single subject at a later time in the larger high schools, to which, if they continue in the teaching profession, many of them eventually go.

The practical need of organizing larger school units is clearly evident as a means of directly improving the situation discussed here. It is hardly practicable at present to demand a distinctly different or more extended training of the teachers who will later have a congested schedule of diverse subjects in the small school, since many of those teachers are avowedly transients in such schools. There are at least two solutions which seem essentially sound for providing larger school units and a consequently better organization of teaching schedules.

One of these solutions relates to a reorganization within the school to provide a junior-senior high school. By this plan two more years of work would be added and the need of extremely varied teaching schedules would be less pressing than with the small enrollment which exists in the present situation. At the same time some of the advantages claimed for a junior high school might be expected for the two classes which were added: The other plan involves a reorganization of the school district so as to provide a greatly increased enrollment in the very small high school. This may be accomplished either by the establishment of a new district to displace the existing one or by the union of two or more small districts which are in close proximity to each other.

To illustrate what the application of the latter of these two plans might accomplish, let us suppose that of the 2,812 classes in Group I which have from 1 to 10 students enrolled, as shown in Table 3, it would be possible to displace at least two-thirds of them by merely providing larger classes through the organization of larger school districts. On the basis of 5 classes per day, the equivalent of 377 teachers of these small classes would be released. The same number of students could then be taught, in classes having an average of 20 students each, by 124 teachers, thus saving the salaries of 253 of the teachers released, which at an average salary of $1,450 per year would represent, in the aggregate, $366,850.

Teachers' Training in Academic Subjects.

The number and variety of subjects which constitute the individual's teaching load, especially in the smaller high schools, invite the pertinent question, What actual preparation have these teachers had for each of the different subjects which they are attempting to teach? One may inquire how many of these teachers are offering instruction in subjects which comprised their major interest in college and how many teach subjects which they pursued as a college

minor. The inquiry may go a step further and ask how many of these high-school teachers are offering instruction in subjects for which they have had no preparation, or at least none beyond their own high-school training.

Information relative to the percentage of teachers who are offering instruction in their own major fields of preparation is shown in Table 7 for the subjects which have the greatest frequency in high-school courses of study. The tabulation of this information was first prepared separately for the three groups of schools represented in this study, but since the differences which were disclosed between the different groups did not seem large or very significant, the data were combined to form a composite table, so that larger and smaller schools are not differentiated in this table.

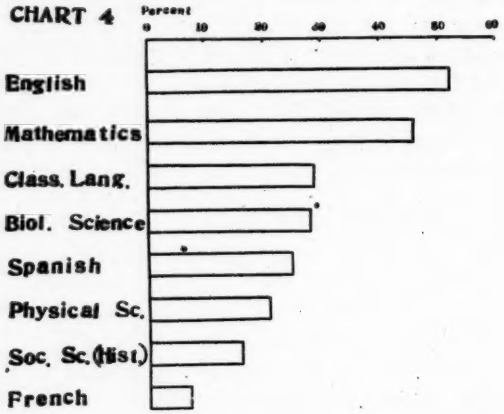
TABLE 7.—Percentages of teachers who teach 0, 1, 2, 3, etc., classes in their major subjects.

Major Subjects.	Number of classes in major.					Total number majoring.
	0	1	2	3	4 or more.	
English	30	7.7	9.3	19	33	635
Mathematics	22	8.7	23	14	32	253
Social Science (History)	36	27.5	20.8	7.7	8	346
Physical Science	29	31	19	7.3	14	179
Biological Science	30	31.5	10	7.5	21	70
French	71	14.3	8	1.7	5	63
Spanish	20	20	35	15	10	40
Classical Language	34	12	25	7	22	109

One of the very interesting facts revealed in this table is the relatively large number of teachers who are teaching no class in the subject in which they are presumably best prepared to offer instruction. In four of the eight subjects listed in this table the number of teachers who are offering no class or only one class in their major field exceed 50 per cent of those who had majored in the subject concerned. Even in mathematics, which has the best record in this respect, 30.7 per cent of the teachers who majored in the subject are not teaching more than a single class in that subject. For the full practical significance of these facts one must take into account the actual number of teachers who had majored in the different subjects as is shown in the right-hand column of the table.

A comparison of the percentages of teachers who are giving in-

struction to three or more classes in the subjects of their major field has been made in Chart 4. The fact that a teacher is teaching three or more classes will usually mean that more than 50 per cent of his teaching load is in that field in which he has had his chief preparation to teach. In most of the subjects, however, the percentage is disappointingly small.



Percentage of Teachers Who Are Teaching 3 or More Classes in Their Major Subject

In collecting the data for this study no direct response was requested regarding the teacher's major field, but the subject in which he had the largest number of hours of college credit (provided it was not less than twenty hours) was tabulated as his major field. While this procedure may be expected to give an element of error, the result serves as an approximation to the truth. It would doubtless have been valuable also to have secured information with reference to their college minors. This was not done, but Table 8 presents the general facts concerning teachers' academic training.

In the next two tables one may see what has been the training of the high-school teachers in higher institutions in those academic subjects which they are now teaching in the high school. Table 8 gives the median number of semester hours and the range of the middle 50 per cent of preparation in the various high-school subjects for the teachers in each of the three groups, excepting that in

Group III no attempt was made to compute the middle 50 per cent for subjects in which fewer than twelve teachers reported.

TABLE 8.—Semester hours of preparation in higher institutions for the subjects which they teach in high school.

Subjects.	Group I.		Group II.		Group III.	
	Median.	Middle 50 per cent.	Median.	Middle 50 per cent.	Median.	Middle 50 per cent.
English	30	22—38	36	26—43	29	21—41
Mathematics	17	10—29	22	13—32	20	6—28
History	18	12—27	25	16—33	23	15—32
Physics	9	4—13	11	8—17	12	6—20
Home-making	38	29—44	40	27—45	32	19—42
Sociology	5	3—8	6	3—16	9	.....
Economics	5	2—9	7	3—10	6	.....
Chemistry	17	11—26	19	13—37	30	.....
Physiology	4	2—6	4	0—6	6	.....
Psychology	5	2—6	4	2—7	5	.....
Physiography	0	0—2	2	0—3	0	.....
Biology	12	7—25	16	6—29	29	16—43
French	18	14—22	24	18—35	30	20—38
Spanish	18	12—24	25	18—37	20	.....
Latin	12	7—21	17	10—29	27	17—42
Science (General)	34	23—43	43	37—45	21	.....
Commercial	4	2—27	32	8—42	15	8—35
Agriculture	9	2—35	16	5—43	49	.....
Physical Education	4	3—9	10	5—24	17	9—28
Music	30	10—44	43	25—67	47	.....

The average (median) preparation beyond high school of the teachers in Group I was five hours or less in seven of the subjects listed. It was less than ten hours in two other subjects. In each of the other two groups there are five subjects in which the teachers who offer the instruction in them average less than ten hours of preparation in the subject taught. As compared with a similar table in the Minnesota study, the median preparation of teachers in Group I of this study was the same in four of the subjects, greater in four and less in eight than in schools of corresponding size in Minnesota. Comparing the average preparation of teachers in Group II in the two states, the Kansas teachers surpassed in nine and were lower in three of the twenty subjects.

It is a situation which merits earnest consideration that in all three groups of schools the teachers who have the least preparation in the subject taught teach sociology, economics, physiology, psychology and physiography. Since none of these five subjects represent more than one or two semesters of work in the high-school curriculum, it is the more easy to understand why so few teachers are well prepared in them and why schools have not more gen-

erally demanded adequate preparation in these subjects when employing those who are to teach them. However, no explanation of how the situation has come to exist can really excuse the injustice which is likely to result to those students who are assigned to teachers that are obviously not prepared for the work. A most likely consequence is that under such circumstances the instruction will be characterized by enslavement to a textbook and that formalized memorizing of unvitalized facts, without much emphasis on their functional value, will frequently prevail.

Agriculture and commercial subjects are taught by relatively unprepared teachers in the small schools. It is a pertinent fact in this connection that practically all of the psychology and all of agriculture except vocational agriculture are taught to meet a requirement in the normal-training courses which are offered in the high school for the preparation of rural-school teachers. It is difficult to believe that these subjects are usually taught as other than formalized book instruction in view of the limited preparation of the instructors.

The explanations already offered for the lack of preparation of teachers in other subjects, as revealed in Table 8, cannot be advanced with reference to physical education. The median number of hours of specific preparation of teachers in this field, as reported by themselves, was four and ten hours, respectively, in Groups I and II. When it is considered that at least a portion of the credit reported in this subject was probably actually in coaching and athletics, which are frequently in competition with the interests of physical education in general, the inadequacy of the preparation of physical education teachers in their own field becomes more apparent. Moreover, this is by no means an incidental subject in which teachers are not expected to be specialists, but the reverse is usually regarded as true.

The prevalence of unprepared teachers in physical education and in physiology, which usually include also all that is offered in these schools of either hygiene or sanitation, brings into serious doubt any claim that they represent a genuine interest in or acceptance of "health" as one of the fundamental objectives of secondary education to be realized in these schools. The persons responsible for the administration of those high schools either do or else do not seriously believe that the promotion of permanent and positive health habits and health knowledge should be one of the major functions of the school. It would seem that if they did truly be-

lieve in health as an objective to be sought in their school program, one of their first steps would certainly be the employment of teachers as well prepared in that field as are the teachers of home-making, for example, in their field.

Physical education as it functions through the schools is largely in the hands of those who select the teachers. Both the kind and the adequacy of the teacher's training are significant in securing the right emphasis of this subject in the school. Neither the specialist in artificial exercises in which boys and girls are not interested, nor the college athlete who knows little of physical education as a subject and less about the education of boys and girls, will be a satisfactory substitute for the trained director or teacher of physical education.

In an excellent article* on "Physical Education in the School," Jesse F. Williams says: "The underlying necessity for physical education in the school is threefold—biologic, social and political." The biologic necessity he defines as a need for development of the organism as a basis of vitality; the social necessity arises from improper use of leisure time and the need of wholesome recreative activities; the political necessity, he says, is based on the relation of individual health and happiness to national strength and safety. This analysis provides a large concept of the job and suggests the need of rightly trained and adequately trained teachers of this subject in every high school.

The authors of the report on the training of high-school teachers in Washington suggest that the minimum preparation for teaching high-school courses should be 12 to 15 semester hours in work of collegiate grade. They then go on to say (page 226), "Our figures demonstrate all too clearly that there are many teachers of many subjects in many high schools who do not measure up to such a minimal standard."

Having studied a subject 15 semester hours in college may seem to provide fair preparation for teaching as much as 5 hours of the subject in high school. But, applying the same margin of preparation, one should have had 20 college hours if he is to teach 10 hours in high school. The author of this report is inclined to urge rather strongly the importance of such a "margin of safety" in the preparation of high-school teachers in the academic subjects in which they will do their teaching. The simple fairness of this re-

* Physical Education in the School: Jesse F. Williams. School Review, April, 1926; pp. 285-294.

quirement will seem evident if, to illustrate, one considers that any number of classes in first-year Latin constitute only 5 hours of the subject, but one or more classes in second-year Latin constitute 10 hours. Third-year Latin represents three years of the subject (15 hours), which is all that many high schools offer. The proposal made here is that the teacher should have studied 25 semester hours of the subject in preparation for teaching the 15 hours (three years) of the subject in high school.

How large a percentage of the high-school teachers in Kansas at present meet this proposed standard of preparation in the subjects which they teach is shown in Table 9 for the schools having fewer than 30 teachers. Nearly all of the subjects listed in this table extend through two or more semesters. Then, "teaching 5 hours" will usually mean teaching one year of the subject; "teaching 10 hours," two years of the subject; and "teaching 15 hours," three years. Preparation here refers to semester hours in college. The nonacademic subjects were not included in this table because of the difficulty in evaluating credits secured from conservatory, business college or industrial school.

TABLE 9.—Per cent of teachers with reference to number of hours of subject which they teach in high school and number of hours which they have studied the subject in higher institutions.

Preparation	Teaching 5 hours.			Teaching 10 hours.			Teaching 15 hours.			Number of teachers.
	Less than 5 hrs.	5 hrs.	15 or more hrs.	Less than 10 hrs.	10 hrs.	20 or more hrs.	Less than 15 hrs.	15 hrs.	25 or more hrs.	
Group I:										
Mathematics	2	18	34	17	13	39	14.8	2.4	59	(460)
History	1	10	58	18	11	49	16	5	45	(469)
English	.....	1	90	2.7	1.8	75.4	.....	2.6	83	(512)
Physics	22.4	18	17	42	26	10	.....	.....	.....	(279)
Home-making	2	4.6	80	.....	2	90	.....	.....	.....	(276)
Latin	1.5	29	33.8	38	8	38	.....	.....	.....	(241)
Agriculture	40	14	35.6	.....	.....	97	.....	.....	.....	(270)
General Science	.....	1.7	89.3	.....	.....	.....	.....	.....	.....	(234)
Physiology	47.5	37.3	1	.....	.....	.....	.....	.....	.....	(217)
Psychology	40	46.5	1.0	.....	.....	.....	.....	.....	.....	(189)
Economics	40	26.8	14.2	.....	.....	.....	.....	.....	.....	(127)
Physical Geography	92	3.3	2.2	.....	.....	.....	.....	.....	.....	(90)
Biology	14	9	41	.....	.....	.....	.....	.....	.....	(78)
French or Spanish	4	2	60	.....	15	35	.....	.....	.....	(72)
Group II:										
Mathematics	2.6	2.6	52.6	14	28	28	10.7	3.8	57	(115)
History	2.3	9.3	70	11	.....	73	10	10	80	(101)
English	.....	3	88.5	.....	.....	95.8	2.3	4.5	86	(147)
Physics and Chemistry	5	14	40	10	25	35	.....	.....	.....	(77)
Home-making	14	10	70	.....	3	91	.....	.....	.....	(65)
Latin	17	.....	50	33	5	20	.....	7	80	(42)
Agriculture	31	20.7	38	20	10	70	.....	.....	.....	(49)
General Science	.....	.....	100	.....	10	90	.....	.....	.....	(38)
Physiology	53	31	4.4	.....	.....	.....	.....	.....	.....	(45)
Psychology	50	31	5.7	.....	.....	.....	.....	.....	.....	(35)
Political Science (civics)	62	20	2	.....	.....	.....	.....	.....	.....	(45)
Biology	8	23	42	.....	.....	.....	.....	.....	.....	(26)
French or Spanish	7	4	80	.....	.....	89	.....	.....	.....	(45)

In a considerable number of the subjects in this table from 50 to 100 per cent of the teachers of the subject had 10 or more college hours of preparation beyond the number of hours which they were teaching. This tendency was much more marked among the teachers of Group II and also more marked in the advanced phases of the subjects. It is significant that not less than 75 per cent of the teachers of English in the schools of both groups reached this standard of preparation. Seventy per cent or more of the history, Spanish, French and agriculture teachers of Group II, and as large a percentage of the homemaking teachers of both groups, reached a similar standard. Accordingly the standard of preparation proposed does not seem to be unreasonable or impossible in general.

The serious lack of teacher preparation for some of the subjects taught does not seem to be due primarily to any general scholastic deficiency in the teachers in so far as the amount of their academic training may be accepted as an index of their preparedness. There is evidence in Table 10 to indicate that a predominant percentage of the teachers in these high schools have had rather liberal scholastic training. More than 80 per cent of the teachers in each of the groups have completed a college or university course. Many of the others have from one to three years of college credit, and still others are normal-school graduates. Not much direct evidence is at present available as to the quality of training received in particular subjects or institutions.

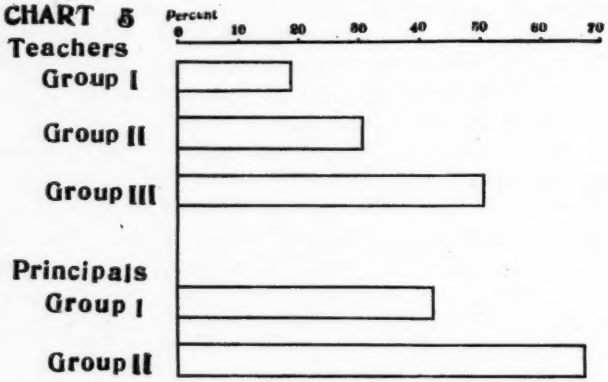
TABLE 10.—Per cent of teachers who have reached different stages of scholastic preparation.

	Normal school.		College or university.		Graduate school.		Total number teachers.
	1 to 3 years.	Graduated.	1 to 3 years.	Graduated.	Less than 1 year.	1 year or more.	
Teachers:							
Group I	2	6	9	63	14	5	1,382
Group II	4	8	5	52	20	11	626
Group III	4.6	7.3	3	33.5	26	25	411
Principals:							
Group I	3	10.5	3	41.5	27	14.6	361
Group II	6	10	2	14	37	30	49

Doubtless the deficient preparation of so many teachers may be traced to three contributory causes: (1) Some students in college prepare to teach *a subject* rather than *subjects;* (2) there is a failure to select the teachers or to assign the teaching work so as to utilize fully the training actually possessed by the teachers employed; (3) a schedule so diverse is imposed upon the teacher that

to expect adequate preparation in all subjects is an unreasonable expectation. Teacher-training institutions can do much to correct the first. Better administrative adjustment and foresight may relieve the second, but in all probability the third factor will not be entirely corrected until the needless duplication due to an excessive number of very small high schools is corrected.

A distinctly encouraging element in the situation is presented in Chart 5. The mounting percentages of teachers and principals who are securing training beyond the bachelor's degree may well command attention. Nearly a third of the teachers in Group II and



Percentage of Teachers and Principals Having Some Graduate Credit

a half of those in Group III have attended a graduate school to secure advanced professional or academic credit. A significant portion of their number has already completed a year of graduate study. There is no likelihood that this movement for better and more extended preparation will soon be satisfied. It is in fact a new and growing movement which bears large promise for the future growth and status of the teaching profession in the state. Especially as the principals acquire more graduate training, much hope may be entertained for the resulting effect of their improved scholarship and educational leadership upon the teaching staff.

It may be considered a source of gratification to know that 42 per cent of the principals in the smaller high schools of the state

and 67 per cent of those in schools having from 11 to 30 teachers have had more than four years of college or university training. But nothing less than this would be acceptable in view of the facts recently gathered by Koos* showing that in similar high schools throughout the country the corresponding percentages are 46 and 69, respectively. In the same study Koos reports that in the high schools which practically correspond in size to those in Group II of this study 6% of the principals have not completed a college course and do not have a degree, while 20 per cent have secured the master's degree. In Group II 18 per cent of the Kansas principals do not have a degree, but, on the other hand, 30 per cent state that they have a year of graduate-school credit. Those who have the master's degree probably constitute 24 per cent.

Training in Professional Subjects and Extent of Teaching Experience.

Assuming that training in professional courses in education, involving such subjects as educational philosophy, educational psychology, school supervision and school administration, have a direct bearing upon the teacher's knowledge of his job and consequently upon his efficiency and success, the teachers were asked to report as nearly as they could which of the education courses in the printed list (see appendix) they had studied at any time and to indicate the length of each course in semester hours. Blank spaces were also provided for reporting other courses not appearing in the list. It was necessary for teachers to approximate the facts when they could not be positive, but, even so, no more accurate source of such information was readily available.

The distribution of the teachers and principals according to the total hours of professional courses in education which they had taken is presented in Table 11. The subject of general psychology

TABLE 11.—Per cent of teachers having various amounts of professional training.

	Less than 6 hours.	6-10.	11-20.	21-30.	31-40.	41-50.	More than 50 hours.	Total number.
Teachers:								
Group I	1.0	3	48	31.6	11	3.8	1.6	1,382
Group II	1.0	2.6	44	33	10	5	4	656
Group III	1.4	2.6	32	38	12.6	7	6	411
Principals:								
Group I	1.0	2.7	29	32	17.7	8.6	8.3	361
Group II	.....	.....	10	32.6	22.4	16	18	49

* The High-school Principal: L. V. Koos (p. 18). Houghton Mifflin Co.; 1924.

was not classed as a professional subject, but abnormal, adolescent, child psychology and similar courses were so classified.

The teachers in both Group I and Group II show a strong modal tendency in the interval 11-20, due in all probability to the fact that the fifteen hours of education prescribed as a minimum for a state certificate to teach in high school is also the maximum training received by a goodly number of recruits. The hours of training which principals have secured have the mode of the distribution in the interval 21-30. The median of hours of training of each of these groups of teachers is one or two hours less than for the corresponding groups as reported in the Minnesota study.

A matter of much more pertinence in the professional training of teachers than the total hours studied is the selection and relevancy, with reference to the duties to be performed, of the courses which make up these hours of credit. The facts which comprise Table 12 disclose what percentage of the high-school teachers had no training in each of the various professional subjects and the percentage which had as much as three hours of credit in the subject. There is no way at hand by which to evaluate, for the purposes of this study, particular courses as offered in any institution or by any instructor, nor can one gauge now what value any student got from a particular course. Moreover, since the courses are not standardized with reference to content, we do not know what overlapping there may have been between certain courses. The table simply states the facts with reference to credit received in the courses which were taken. No other assumption seems to be warranted here than that in general the courses were representative ones in content and quality.

For the interpretation of Table 12 it should be understood that educational administration is inclusive of all courses in high-school administration. Likewise, principles of education includes also courses in educational philosophy and principles of secondary education. Educational psychology represents all courses which were essentially psychological except courses in general psychology. Credits in supervision were combined with credits in administration, since the two are often combined in the courses offered and not separable in such instances, but there is some evidence that separate courses taken in supervision were exceedingly rare. Courses in high school and elementary school curriculum making or curriculum revision were tabulated under one head not because they are identical, but because credits in such courses were relatively rare.

TABLE 12.—Percentages of teachers according to hours of preparation in various professional subjects.

Subjects.	Teachers.						Principals.			
	Group I.		Group II.		Group III.		Group I.		Group II.	
	Hrs. studied.		Hrs. studied.		Hrs. studied.		Hrs. studied.		Hrs. studied.	
	0.	3 or more.	0.	3 or more.	0.	3 or more.	0.	3 or more.	0.	3 or more.
1. Educ. Admin. or Supervision	22	70	27	61	35	55	14	80	5	92
2. Educational Psychology	14	81	12	81	15	78	7	88	8	90
3. History of Education	37	57	34	58	24	57	22	68	16	64
4. Principles of Education	38	55	31	62	25	65	25	70	46	28
5. Educ. or Mental Measurement	79	12	73	14	67	22	59	32	33	64
6. Curric. (High School or Elem.)	86	11	83	13	83	10	75	18	65	26
7. Educational Sociology	60	35	61	31	68	24	53	40	67	26
8. Teaching Methods (general)	37	57	39	52	38	50	38	54	41	41
9. Teaching Methods (specific)	51	40	45	46	26	47	63	29	54	28
10. Practice Teaching	56	39	50	42	46	43	57	36	59	38
11. Educ. Experiment or Research	87	9	90	6	95	3	80	13	90	8
12. Educ. or Vocational Guidance	94	3	93	4	91	5	88	7	90	3
13. Vocational or Ind. Education	87	10	89	7	88	6	87	9	87	3
14. Rural Education	87	9	90	6	93	5	80	13	90	8
15. School Hygiene	96	4	96	3	98	1	94	5	97	0
16. Foreign School Systems (comparative education)	98	1	98	1.5	97	1.5	97	2	87	8

The reader may observe that in Group I 37 per cent of the teachers had never had any course in history of education, while 57 per cent had secured 3 or more hours of credit in that subject. The remaining per cent (100—[37 + 57]), who reported that they had a credit of one or two hours in the subject, may be easily determined for this or other subjects in the table. One cannot fail to be impressed by the large percentages of teachers and principals who have no acquaintance with many of these professional subjects.

Indeed, the facts in this table seem to lead to but one conclusion with reference to the competence of these teachers in general to contribute effectively to the modification of the curriculum, to share safely in the educational guidance of pupils, or to effect improvement of instruction by means of simple and practical experimentation which is so essential in progressive teaching procedure. Modern education also demands more valid and reliable measures of instruction results and a fuller recognition of essential differences

in pupil achievement than is provided by traditional methods of measurement in school work. Yet the majority of these teachers have had little direct opportunity to learn of the methods or instruments involved in educational and mental measurement in the more accepted modern sense.

A reasonably complete understanding and appreciation of the American secondary school involves so much that is directly and indirectly related to the institutions and practices in secondary education in other countries, from which this country has borrowed freely, that teachers would almost certainly be much benefited by some direct acquaintance with the similarities and differences in comparison with our own institutions by which those countries provide for secondary education. But courses in comparative education or foreign school systems were reported by only two or three per cent of the high-school teachers.

Whatever may be the content and practical value of school hygiene, apparently there has been little tendency on the part of these teachers to avail themselves of the training which it provides. But if there still be truth in the ancient Greek proverb, "a sound mind resides in a sound body," then the health of both mind and body might well be made a concern of the teachers of youth. In this sense one might expect a course in school hygiene to give due emphasis to mental hygiene, personal hygiene, social hygiene and building hygiene as they relate to the school program and to each other.

Unfortunately, "rural education" still seems to represent a classification rather than to convey a meaning or to signify a series of definite problems in actual situations to be met especially in agricultural states with chiefly a rural population. If the classification employed by the United States Bureau of Education is accepted, then towns having less than 2,500 population will be regarded as essentially rural communities and about 65 per cent of the population of this state may be regarded as living in rural communities.

To whatever extent it may be necessary or desirable to understand intimately the rural needs, the social, educational, religious or economic problems of rural people, and the difficulties to be met in making the school organization adapted as well as possible to provide for these needs—to at least that extent it is important for teachers, especially in high school, to have studied rural education, or the practical application of modern educational principles and

practices to the situations found in rural communities. Considering the need, an exceedingly small per cent of the teachers in the more definitely rural schools have been so trained.

Educational sociology has likewise received only a limited recognition on the part of these teachers in their professional preparation—or perhaps it is the teacher-training institutions to which the marked limitations of training of their former students in some of these subjects should be charged. Either their failure to provide a course in any subject or to recognize its importance in the preparation of teachers would tend to account for some of the restricted training of teachers disclosed in Table 12. Certainly the necessity of dealing with groups in social situations in the school and in the community with reference to such problems as discipline, coöperative projects, organized student activities, social standards, school sentiment (in or out of school) and united community support would seem to indicate a very practical contribution which educational sociology might make to the preparation of the high-school teacher.

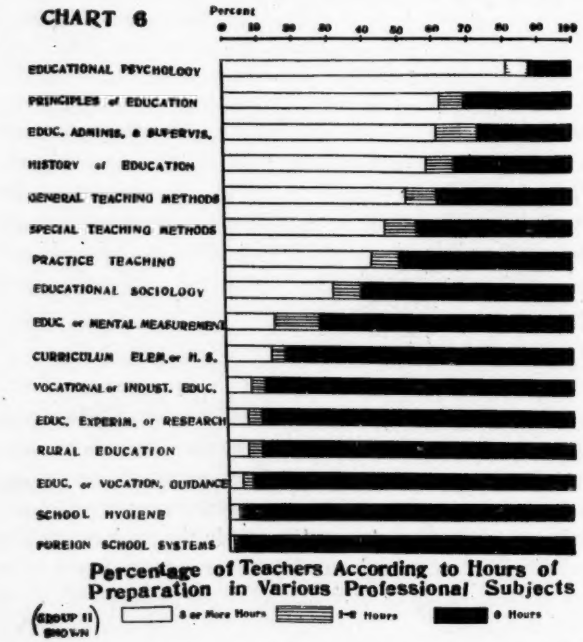
If practice teaching, as it is provided for students in training, is as important as it is often considered to be, then it is evident that a majority of the teachers must have been more or less handicapped by their lack of training in that work. It is possible that some practice teaching may have been involved in the courses in teaching methods (specific) as related to the student's major subject, but no information was obtained on whether or not this is true.

Chart 6 presents in a visual manner much of what is shown in Table 12, so far as the facts pertaining to Group II may be regarded as typical of all three groups of teachers. In this chart the portion of each bar which is in outline shows the per cent of teachers who have had as much as three hours of credit in the subject represented. The shaded portion of each bar indicates one or two hours of credit, while the portion in black designates the per cent who have never taken such a course.

Much of what has been said thus far with reference to the professional training of the high-school teachers as shown in Table 12, and the grave inadequacy of training disclosed by that record in more than half of the professional subjects named, may be stated with greater force pertaining to the high-school principals, from whom knowledge, leadership and vision must be expected if the high school is to function in an effective way according to modern

standards in secondary education. It is important that the responsibility for the immediate direction of the high school be centered in an adequately trained leader who also possesses the other personal, social and physical qualities requisite for the duties of a high-school principal.

It follows as a corollary that, while the community should demand much relative to the fitness of its high-school principal for such an important position, it should expect also to pay a compensation in salary that is reasonable with reference to the high standards which are demanded of such a person. To sacrifice standards

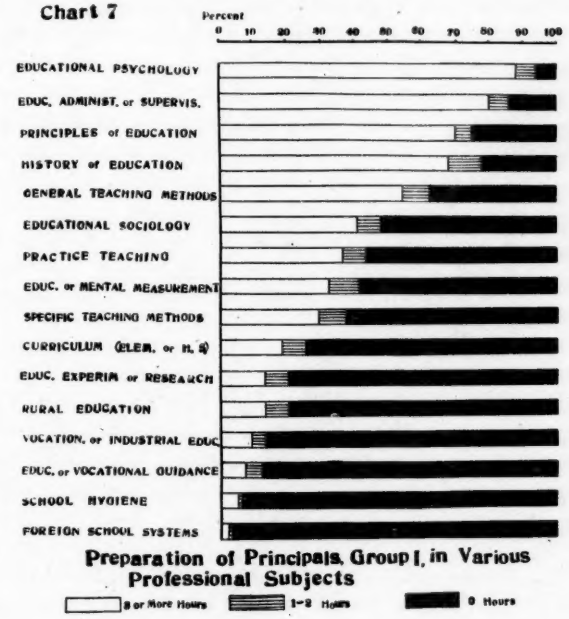


or to make the appointment of the principal fit a salary which will not command a person of adequate training and ability cannot be other than unfortunate for the school concerned. Money saved at the expense of efficiency will prove to be poor educational economy. It will usually prove better policy and better administration for two or more small adjoining schools to unite in employing one well-trained principal than for each to employ a cheaper but less compe-

tent principal. The division of service between the schools may be specified by mutual agreement in advance of the employment.

The professional training of the high-school principals of Group I is shown in Chart 7, which is similar to the preceding chart that pertains to the training of teachers. The facts are not much different in most respects from those pertaining to the principals in Group II, for which no chart has been provided.

Doubtless it is the influence of the teacher-training institutions attended by these principals which accounts to a considerable degree for the order of subjects shown in Chart 7 according to their



greater frequency in the training of the principals, although no facts were collected concerning the institution attended. A comparison with a similar analysis made by Koos,* involving 421 high-school principals scattered widely over the United States, brings out this fact quite prominently. The order of the ten subjects which were highest in frequency on Koos' list are as follows:

* L. V. Koos, The High-school Principal, p. 33.

	Per cent.
1. History of education	80
2. Principles of education	72
3. Principles of secondary education	66
4. High-school administration	66
5. Educational psychology	56
6. General methods	50
7. High-school curriculum	47
8. Philosophy of education	40
9. Educational measurement	38
10. Practice teaching	38

It may be admitted that neither list of subjects provides any conclusive evidence of the relative value of a subject merely by its place in the list based upon the frequency with which it was taken. But in the same study Koos presents (p. 55) a list of subjects the significance of which in the training of high-school principals will certainly command attention.

The same high-school principals (421) reported above, whose average experience in school work exceeded twelve years, were asked, "If you were to make further preparation for the work of high-school principals, what sort of training would you emphasize?" Of the replies, 86 per cent pertained to professional training. The order of the subjects which head the list, according to frequency, as these principals reported they would give them further emphasis, is as follows:

1. Administration.
2. Measurement.
3. Supervision.
4. Psychology.
5. Curriculum.
6. Guidance.

Those persons who aspire to the high-school principalship, as well as the institutions which provide the training, may profit by the testimony of those who have faced the actual problems involved in being the responsible head of a high school. Reference to Chart 7 shows that the high-school principals in the state of Kansas are deficient in three of the subjects (measurement, curriculum and guidance) which were especially recommended by the principals to whom reference has just been made, and it is altogether probable that they have also had too little direct training in supervision to be very significant. (It is combined with administration as shown in chart 7.) The other two subjects head the list in the professional preparation of the principals in both groups.

The extent of their teaching experience and the different types of school experience which the teachers and principals have had are also worthy of consideration with reference to their preparation for the work which they are expected to do. It is assumed that some

actual acquaintance with the problems in elementary schools or junior high schools will be of definite value to the high-school teachers. It is, however, not the intention of the author to imply that all teaching experience is good or valuable experience, or that some kinds may not actually be a handicap with reference to later success in teaching.

The facts that a majority of the teachers in each of the three groups have had no teaching experience in the elementary school and that a still larger majority have never taught in a junior high school is made evident in Table 13. It is also evident that in the smaller high schools 39 per cent of the teachers are teaching their first year in high school, as they reported that they have had no previous experience in that type of school. One-fifth of the teachers in Group II were also teaching their first year in high school, or else they were teaching ninth grade in the junior high school. The percentage of inexperienced teachers in Group III is much smaller than in either of the other groups.

TABLE 13.—Percentages of teachers according to years and types of teaching experience.

Years of Teaching Experience.	Group I.			Group II.			Group III.		
	In elem. schools.	In junior high schools.	In senior high schools.	In elem. schools.	In junior high schools.	In senior high schools.	In elem. schools.	In junior high schools.	In senior high schools.
0	65	93	39	58	89	21	53	82	6
1–2	15	4.5	30	18	6.8	28	18	10	12
3–4	9	1	15	10	2.4	21	13	5	15
5–6	4	.5	6	5	1	10	6	1	15
7–8	2	.....	4	2	.....	6	4	1	17
9–10	3	.....	4	.4	.5	12	5	1	34

In this table one may observe how few teachers continue to teach in the small high schools as long as five years. Eighty-four per cent of the total number have a shorter tenure. These facts suggest that the teachers are not attracted to remain in schools where the teaching load is as heavy and diverse and the supervision so limited as is true in the small high school. The turnover in the teaching staff of Group II is not so great as in Group I; still it is excessive, and the best teaching results cannot be expected when 49 per cent of the staff change, whatever the reasons, within a period of three years, as in Group II.

Similar facts with reference to the amount and kinds of teaching

experience of the high-school principals in the schools of Groups I and II are presented in Table 14. Not only does one discover that a relatively large portion of the principals in both groups have had no experience with either elementary or junior high-school teaching situations, but that one in twelve (8 per cent) of those reported to be principals in the small high schools have had no previous experience in high-school teaching. It is indeed difficult to believe that persons with little or no teaching experience and with such an imposing deficiency in some of the essential subjects pertaining to their professional preparation as has already been disclosed will still be able to perform the more important duties of a high-school principal in a worthy manner.

TABLE 14.—Percentages of high-school principals according to years and types of teaching experience.

Years of Teaching Experience.	Group I (361).			Group II (49).		
	In elementary schools.	In junior high schools.	In senior high schools.	In elementary schools.	In junior high schools.	In senior high schools.
0	45	90	8	30	84	.....
1-3	30	8	29	40	14	18
4-6	13	2	27	16	2	25
7-9	5	.....	15	8	.....	22
10 or more	6	.....	20	6	.....	35

It is of course possible that some principals who have had no experience in other than the high school have by study and reading kept closely in touch with the problems, practices and developments in the junior high school and elementary schools, but this investigation provides no information on that question. Some persons may hold to the conviction that experience of this indirect type is in no sense a satisfactory substitute for the actual teaching contacts to be met in the classroom, but it is certainly better than having neither experience nor knowledge.

Summary of the Report.

This study, which represents a joint project of the State Department of Education and a bureau of the University of Kansas, provides detailed information on the teaching load and the teacher preparation of 2,449 high-school teachers and 410 high-school principals in Kansas. In the analysis of these facts the schools have been differentiated into three divisions on the basis of size of teaching staff.

With reference to the number of classes daily, some teachers in the small high schools have eight classes exclusive of other responsibilities. The median number of classes reported was four or five, not including such duties as study hall, home room, or directing student activities, which are frequently equivalent to one or two additional classes in computing the total teaching load.

The number of daily classes per teacher is closely related to the existence of an imposing number of very small classes, especially in the small schools. The median pupil-hour load of teachers in schools having thirty or more teachers is nearly twice as large as in schools having not more than ten teachers.

The average teaching load of both teachers and principals in the small schools included three different subjects or fields of instruction. In the schools having more than ten teachers a majority of the teachers have all of their classes in one subject.

The teaching schedule of a teacher in the small high schools usually involved such a diversity of subjects, with small classes in each, that the need of a larger administrative unit becomes evident for securing both efficiency and economy.

The degree of diversity in teaching schedules varied greatly by subjects. Some subjects are taught singly much more frequently than others, while some subjects are seldom taught singly.

The teaching work did not seem to be assigned in such a way as to utilize very fully the academic preparation of the teachers. As high as one-third of those who majored in some subjects are teaching no class in the subject. Many others are teaching but one class in their major field.

The median amount of preparation in higher institutions in the subjects which they teach seemed grossly inadequate with reference to the teachers of several of the subjects taught. Among these were sociology, economics, psychology, physiology, physiography, and in smaller schools commercial subjects and physical education.

Ten hours of preparation of collegiate rank in a subject in advance of the work which is taught is proposed as a minimum standard of academic preparation of teachers. In several subjects the percentage of teachers who already reach this standard of preparation is large.

The deficient preparation of teachers for subjects taught was apparently not due to any general scholastic deficiency. More than 83 per cent of the teachers had a bachelor's degree, and from 20 to 50 per cent (according to school-size grouping) had earned some graduate-school credit. Many had the master's degree.

The hours of credit which the teachers have earned in professional subjects seemed restricted both in their number and distribution. Their weakness by subjects was most marked in measurement, guidance, curriculum, experimental and rural education, school hygiene, supervision, and comparative education.

The professional preparation of the high-school principal was weak in the same subjects and to almost as great a degree in general as was true of the teachers. This situation is the more significant since several of these subjects are prominently identified with the meaning and viewpoint of modern education.

An absence of varied or extended teaching experience was particularly marked among the teachers in the small high schools. A predominant number of both teachers and principals had had little or no experience in junior high or elementary schools.

APPENDIX.

STATE OF KANSAS.
DEPARTMENT OF EDUCATION.

JESS W. MILEY,
SUPERINTENDENT OF PUBLIC INSTRUCTION,
TOPEKA.

JANUARY 23, 1925.

To the Principal of High School:

Herewith is a blank for each teacher in your high school. Will you kindly see that each blank is filled out promptly and carefully and returned to this office immediately?

The facts required are very important, and this department will appreciate quick action on the part of the teachers.

Perhaps the best plan is to call a meeting of all the high-school teachers and complete the blanks at a single session.

Each teacher should give the number of study-hall periods or other class exercises separately on the blank.

Please sign your name; give the name of your high school and city.

Yours truly, JESS W. MILEY,
State Superintendent of Public Instruction.

JEE/an,
Encl.

A STUDY OF SIZE AND VARIETY OF TEACHING LOAD IN KANSAS HIGH SCHOOLS.

Are you a teacher, principal or superintendent? (Underscore position.)
Teaching experience: Number years taught previous to this year:

In elementary grades or rural schools.....
In junior high school.....
In senior high school or four-year high school.....
In present position.....

Teaching preparation:

High school—number years.....
University—number years.....
Normal school—number years.....
Postgraduate—number years.....
College—number years.....
Degrees held.....
Total number semester hours academic training.....
Total number semester hours professional training (in Education).....

Please indicate in the following list the number of hours of credit received by you in the education courses which you have studied in normal school, college or university.*

Courses in—	*Hours.*
Administration and supervision	
Educational Psychology (child, adolescent, abnormal, genetic, etc.)	
Principles of education	
Principles of secondary education	
Educational measurements	
Mental measurements	
Educational sociology (all aspects)	
History of education	
Teaching special subjects	
Practice teaching	
General teaching methods	
Elementary or high-school curriculum	
Vocational or industrial education	
Vocational or educational guidance	
Rural education	
Foreign school systems (comparative education)	
Educational experimentation or research	
Other subjects	

* If you are not positive give approximate number and put a circle around it.

Indicate in the list following your academic preparation in terms of high-school units and college hours.* (A high-school unit represents completed work in a subject for 4 or 5 hours a week for 36 weeks. A college hour means one hour per week of recitation or 2 hours per week of laboratory for a half year.)

Subject.	*H. S. Units.*	*College Hours.*	*Subject.*	*H. S. Units.*	*College Hours.*
English			General Psychology		
Mathematics			Shop Work		
History			Philosophy		
Economics			Music		
Political Science			Physical Education		
Sociology			Home-making		
Physics			Commercial		
Chemistry			Latin		
Zoölogy			French		
Botany			German		
Physiography			Spanish		
Physiology			Greek		
Agriculture			Other subjects		
Geology					
Astronomy					

Report here what classes you are teaching during the current year:

Subjects.	*First or second half of year.*	*Periods per week.*	*Number weeks in course.*	*Number pupils in class.*

What other high-school subjects have you taught in previous years? .....

.....

What is your present salary per month?..... Number months in year.....

What type of certificate do you now hold?.....

* If you are not positive give approximate number and put a circle around it.